

Exhibit 5 - part 2

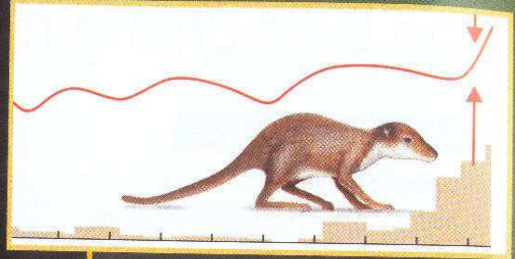
to

DECLARATION OF ASHIMA AGGARWAL

in support of

DEFENDANTS' MOTION FOR SUMMARY JUDGMENT

CHAPTER OUTLINE



■ The Ever-Changing Earth p. 336



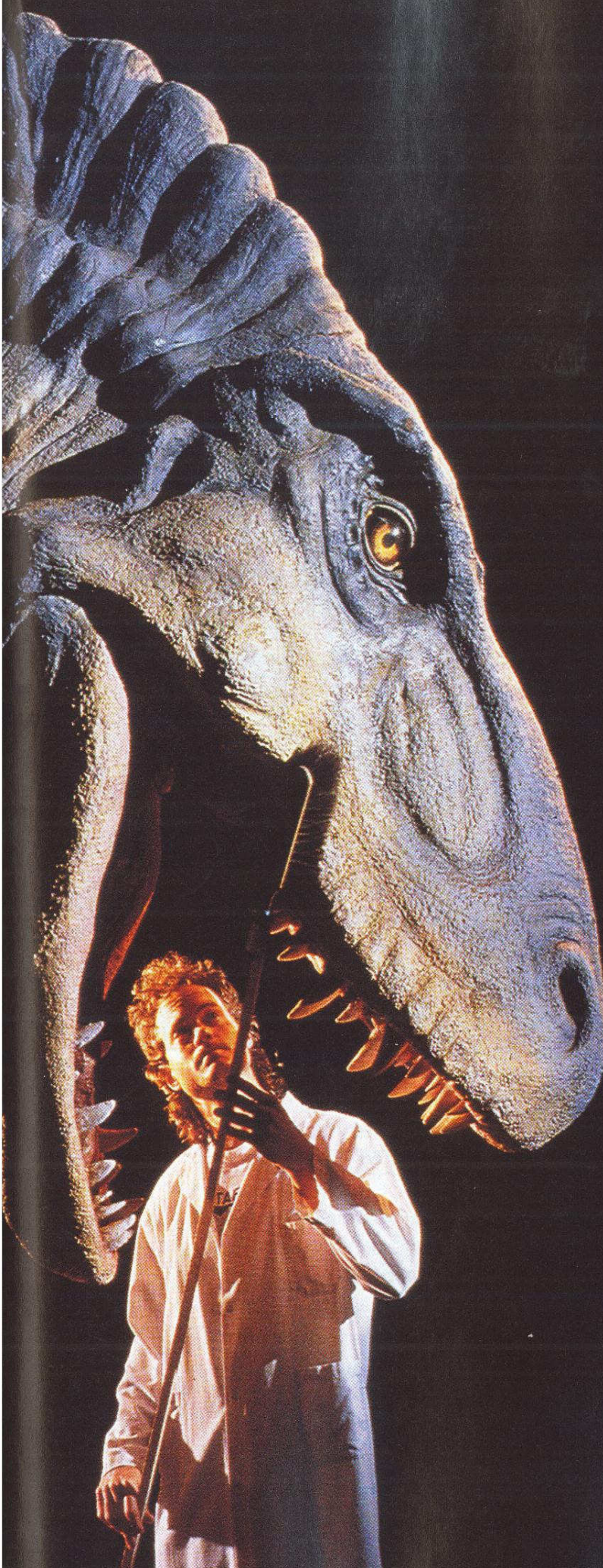
■ Early Life p. 339

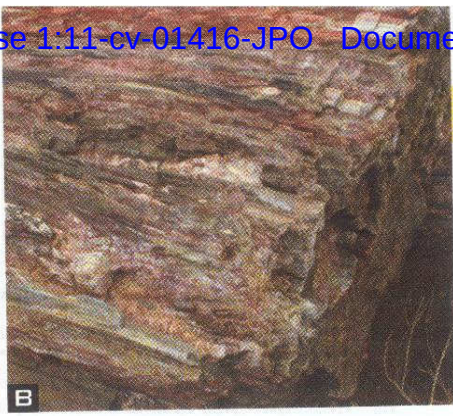


■ Evolution and the Fossil Record
p. 345



■ Life in the Phanerozoic Eon p. 349





Examples of fossil formation **FIGURE 11.12**

A Even the delicate legs and wings of this ancient mosquito are preserved in its casing of amber, which is fossilized tree resin. The mosquito is more than 24 million years old.

B Over many millennia, this log in Petrified Forest National Park, Arizona, became mineralized. Although it looks uncannily like fresh wood, preserved even down to the cellular level, it is completely made of stone.

Sometimes a deceased organism is preserved with little or no alteration. For example, insects many millions of years old have been trapped in tree sap, which hardens into amber (see **FIGURE 11.12A**). This seals the specimen off from the elements so completely that parts of its original organic matter can still be recovered. Ice and tar are also excellent preservatives. In dry climates, natural *mummification* can occur, in which the soft parts dry and harden before they have a chance to decompose.

More often, however, fossils reflect the original shape of an organism but do not contain the original materials. Bones and other hard parts are replaced by minerals carried in solution by groundwater (a process called *mineralization*). This is the process that creates *petrified wood* (see **FIGURE 11.12B**). The remains of plants are sometimes preserved by carbonization, which occurs when volatile material in the plant evaporates, leaving behind a thin film of carbon.

Some fossils do not contain any actual parts of the organism. For example, the organism may leave behind an imprint or *mold* in the soft sediment that covered it, as in the Ediacara fauna. Other kinds of indirect evidence

of previous animal life include eggshells and **trace fossils** (see **FIGURE 11.13**). Finally, prehistoric animals left behind fecal droppings, which are called *coprolites* when preserved and fossilized. In spite of their unappealing origin, such fossils provide useful clues about the animals' characteristics, habits, and diets.

trace fossil Fossilized evidence of an organism's life processes, such as tracks, footprints, and burrows.

CONCEPT CHECK **STOP**

Where did Charles Darwin find the evidence that led him to the theory of natural selection?

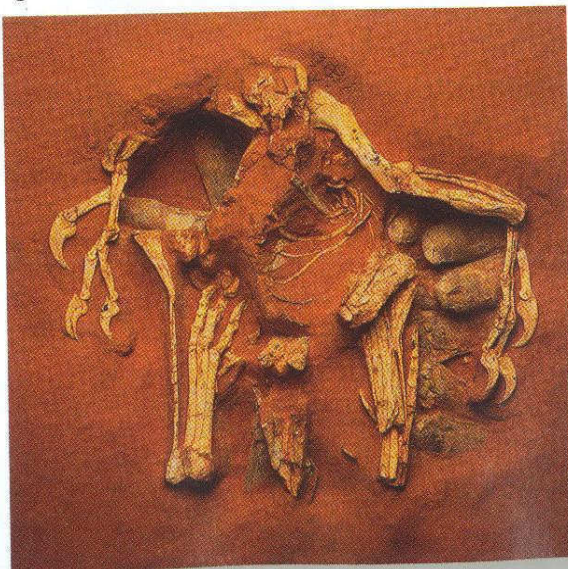
Why does natural selection rely on random variations in the genetic code?

Why do hard-bodied animals (or hard parts such as teeth) appear more often as fossils than soft-bodied animals or soft parts?

How are soft-bodied animals sometimes preserved?

Not all fossils are bodies **FIGURE 11.13**

A This two-meter-long fossilized dinosaur (oviraptor) was found curled protectively around a nest containing at least 20 eggs. This is considered to be the first proof that dinosaurs cared for their young.



B Over 65 million years ago, hadrosaurs in what is now Argentina left their tracks in soft, red mud, which turned to rock. The formation of the Andes Mountains tilted it to such an extent that the formerly horizontal mud flat is now a vertical rock wall.

